

**2008 REPORT TO THE NATURAL RESOURCES, AGRICULTURE &
ENVIRONMENT INTERIM COMMITTEE and the HEALTH & HUMAN SERVICES
INTERIM COMMITTEES**

Prepared by the Utah Department of Agriculture and Food and the Utah Department of Health

UNPASTEURIZED MILK-ASSOCIATED DISEASES IN UTAH

I. Purpose and Summary:

The Utah Code, Title 4-3-14(7) requires the Utah Department of Agriculture and Food (UDAF) and the Utah Department of Health (UDOH) to report to the Natural Resources, Agriculture and Environment Interim Committee and the Health and Human Services Interim Committee in 2008 and 2009. The report is to communicate health problems in Utah resulting from the sale of raw whole milk at self-owned retail stores.

In compliance with HB 311, Title 4-3-14(7), passed in the 2007 legislative session, UDAF & UDOH have collaborated to provide this report regarding “any health problems resulting from the sale of raw whole milk at self-owned retail stores.” No disease cases or outbreaks have been associated with retail sale of raw milk over the past year. There have been isolated, sporadic cases of disease where raw milk was one of the potential sources of infection.

II. Background and Overview

Unpasteurized (raw) milk consumption is a recognized risk factor for diarrheal illnesses due to bacteria such as *Campylobacter*, *Salmonella*, and Shiga toxin-producing *E. coli* (STEC) including *E. coli* O157:H7. Other diseases potentially transmitted through unpasteurized milk include brucellosis, *S. aureus* infection, tuberculosis, Q fever, listeriosis, yersiniosis, toxoplasmosis, and rabies.

Physicians, laboratories, and other entities that identify these infections are required to report them to their local health department or the UDOH. Public health investigators then interview cases for food, travel, and animal exposure history and other risk factors to determine a possible source of illness. Besides consuming unpasteurized milk, other common risk factors for diarrheal illnesses include eating improperly cooked animal products or foods contaminated by animal

products, drinking untreated water, handling livestock, contact with reptiles and amphibians, and household or close contact with someone who has diarrheal illness.

III. Utah Dairy Act

The UDAF currently has several different dairy farm permits:

1. Sell Grade A raw milk to a Grade A plant for pasteurization, then sold as fluid milk (Title 4-3-10(2)).
2. Sell Manufacturing Grade milk to a plant for pasteurization, then manufacture dairy products (e.g. cheese, ice cream, dry milk) (Title-4-3-10(2)).
3. Sell raw milk, must be bottled and sold on the premises (Title 4-3-14(2)).
4. Sell raw milk, may be bottled and sold at retail establishment off premises (new) (Title 4-3-14(3)).

The last two permits are the only legal means by which raw milk can be sold for human consumption in Utah. During their 2007 session, the Utah Legislature approved an expansion to the means by which unpasteurized milk can be sold in Utah. This expansion allowed authorized dairies to transport their raw milk to an off-site retail store owned and operated by the dairy (permit listed as 4 above) and sell it to the public.

IV. Health Problems Associated With or Resulting From The Sale Of Raw Whole Milk At Self-Owned Retail Stores.

There are currently two self-owned retail stores selling raw milk in Utah. They are in Orem and Heber City, and are owned by the same dairy. The dairy and stores have been in compliance with the regulations. No human illnesses have been associated with milk sold at these two stores.

This year, through October 15, there have been 12 isolated, sporadic cases of illness that might be associated with the consumption of raw milk. The UDAF and the UDOH have implemented a procedure for timely investigation and sharing of information between the two agencies regarding these cases. The goal of our response is to rapidly discontinue public access to contaminated raw milk, should evidence of such contamination be detected.

Although, no cases of illness have been directly associated with consumption of raw milk from these stores, several factors make it difficult to assure that no such disease has occurred. These factors include: 1) research has demonstrated that infections with enteric organisms are

incompletely diagnosed and reported to public health; 2) patrons of these stores might decline to provide information about the source of their milk to protect the source of the raw milk they have consumed; and 3) identification of exposure to raw milk and of the sources of that milk depend on investigations conducted by Utah local health department investigators and inadequate local public health resources often limit the timeliness and completeness of those investigations.

V. Summary Of Unpasteurized Milk Associated Outbreaks In Utah, 2000-2008.

2000

In August 2000, five persons became ill with *Campylobacter* after consuming raw milk.

2002

In January 2002, unpasteurized milk was provided at a basketball team breakfast in Juab County resulting in an outbreak of 13 cases (5 laboratory-confirmed) of *Campylobacter*.

2005

In September 2005, a local clergyman visited a group treatment home for youth in Bear River to perform services. He also provided brownies, cookies and milk. The milk came from his farm and was unpasteurized. A total of 11 persons were diagnosed with *Campylobacter* (6 laboratory-confirmed).

In October 2005, five Arizona cases and two Utah cases of *Campylobacter* from October reported drinking unpasteurized milk at a dairy in Colorado City, Arizona. The Arizona Department of Health Services recovered *Salmonella* from unpasteurized milk from the dairy. There were no cases of salmonellosis associated with the milk. (Note: *Campylobacter* is notoriously difficult to recover from milk and was not recovered from this milk.)

An outbreak of *Campylobacteriosis* occurred among students of a Salt Lake County veterinary technician training class that visited a dairy farm in Juab County in October 2005. Sixteen students attended the class; 8 drank unpasteurized milk; about 2 or 3 became ill. *Campylobacter* was recovered from the stool on one of those ill.

2006

Two additional cases of *Campylobacter* were identified in February and March of 2006 that consumed unpasteurized milk from the same dairy in Colorado City, Arizona that was implicated in an investigation in October of 2005.

2007

An outbreak of Campylobacteriosis occurred in Utah County associated with raw cow and goat milk from a local dairy. Approximately 26 confirmed cases were associated with the outbreak. A case-control study was conducted to evaluate the outbreak and to test the hypothesis that raw milk was the source of infection; consuming raw milk from the dairy was associated with illness.

2008

No outbreaks associated with raw milk or raw milk products have been reported in 2008 to-date.

VI. All Illnesses Associated with Unpasteurized Milk

From 2000 to 2007, 18.0% of people in Utah with *Campylobacter* for whom data were available (including outbreak-related cases) reported having consumed unpasteurized milk or unpasteurized milk products. 2.4% of those with shigatoxin-producing *E. coli*; and 2.2% of those with *Salmonella* reported consuming unpasteurized milk (see Table below). Unpasteurized milk consumption was also reported among cases of giardiasis, though consuming unpasteurized milk is not recognized as an important source of *Giardia* infection.

Table: Percent of cases of campylobacteriosis, Shiga toxin-producing *E. coli* (STEC) infection, and salmonellosis who reported consuming unpasteurized (raw) milk or unpasteurized milk products, State of Utah, 2000-2007

Year	Campylobacter	STEC	Salmonella
2000	13.7	3.8	0.7
2001	14.3	5.3	1.8
2002	11.5	3.1	3.4
2003	10.1	0.0	1.0
2004	13.9	2.8	1.6
2005	23.7	2.8	3.0
2006	18.4	2.7	1.9
2007	36.6	0.0	5.8
2000-2007	18.0	2.4	2.2

Campylobacter: Percent of cases of campylobacteriosis who reported consuming unpasteurized (raw) milk or unpasteurized milk products, State of Utah, 2000-2007

Year	Raw Milk	Answered*	%
2000	24	175	13.7
2001	18	126	14.3
2002	16	139	11.5
2003	14	139	10.1
2004	23	165	13.9
2005	37	156	23.7
2006	25	136	18.4
2007	59	161	36.6
2000 – 2007	216	1197	18.0

Shiga toxin-producing E. coli (STEC): Percent of cases of STEC illness who reported consuming unpasteurized (raw) milk or unpasteurized milk products, State of Utah, 2000-2007

Year	Raw Milk	Answered*	%
2000	2	53	3.8
2001	2	38	5.3
2002	2	64	3.1
2003	0	52	0.0
2004	1	36	2.8
2005	1	36	2.8
2006	3	113	2.7
2007	0	59	0.0
2000 – 2007	11	451	2.4

Salmonella: Percent of cases of salmonellosis who reported consuming unpasteurized (raw) milk or unpasteurized milk products, State of Utah, 2000-2007

Year	Raw Milk	Answered*	%
2000	2	307	0.7
2001	2	112	1.8
2002	3	88	3.4
2003	1	98	1.0
2004	2	126	1.6
2005	5	164	3.0
2006	3	154	1.9
2007	9	156	5.8
2000 – 2007	27	1205	2.2

*Answered: Number of cases for whom a response was available (excludes unknowns).